

Amendments to the Claims

Please amend claims 1, 11, 30 and 35. Please cancel claims 3-8, 10, 13-28 and 32-33. Please add new claim 37. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1. (Currently Amended) A method of displaying a holographically generated video, said video comprising a plurality of video frames, the method comprising providing for each frame a respective sequential plurality of holograms to reconstruct the frame, and displaying to a human observer the holograms of each of the plural video frames on a diffractive display device for viewing the replay field thereof, wherein the noise fields of said holograms are independent and identically distributed (i.i.d.), and wherein said ~~frames~~ holograms are displayed quickly enough for the limited temporal bandwidth of the eye of said observer to impart an effect of noise variance attenuation due to averaging, whereby the noise variance of each frame is perceived by said human observer as attenuated by averaging across said plurality of holograms, wherein a process of providing said plurality of holograms comprises:
 - receiving an input intensity image;
 - forming n target intensity images each equal to an amplitude of said input intensity image, and each having i.i.d. uniformly-random phase;
 - computing n full complex Fourier transform holograms
respectively corresponding to said n target intensity images, a said Fourier transform hologram comprising a real part and an imaginary part; and
 - quantizing said real and imaginary parts of each of said Fourier transform holograms to more than two phase levels to provide said plurality of holograms to reconstruct said frame, wherein said reconstructed frame lacks a conjugate image.

2. – 8. (Cancelled)

9. (Previously Presented) A method according to claim 1 wherein the image is a 2 dimensional image.

10. (Cancelled)

11. (Currently Amended) Apparatus constructed and arranged to display a holographically generated video, said video having a plurality of video frames, the apparatus comprising processing means arranged to provide for each frame a respective sequential plurality of holograms to reconstruct the frame, and a diffractive display device arranged to receive the sequential plurality of holograms of each frame and to display to a human observer the holograms of each of the plural video frames of the video for viewing the replay field thereof, wherein the noise fields of said holograms are independent and identically distributed (i.i.d.), and wherein said ~~frames~~ holograms are displayed quickly enough for the limited temporal bandwidth of the eye of said observer to impart an effect of noise variance attenuation due to averaging, whereby the noise variance of each frame is perceived by said human observer as attenuated by averaging across said plurality of holograms, wherein said processing means is further configured to:

receive an input intensity image;

form n target intensity images each equal to an amplitude of said input intensity image, and each having i.i.d. uniformly-random phase;

compute n full complex Fourier transform holograms respectively corresponding to said n target intensity images, a said Fourier transform hologram comprising a real part and an imaginary part; and

quantize said real and imaginary parts of each of said Fourier transform holograms to more than two phase levels to provide said

plurality of holograms to reconstruct said frame, wherein said reconstructed frame lacks a conjugate image.

12. - 28. (Cancelled)

29. (Previously Presented) A method according to claim 1, further comprising modulating a light intensity of a light source illuminating said diffractive display device in accordance with the number of on pixels in said replay field to achieve substantially uniform overall brightness between said frames.

30. (Currently Amended) A method according to claim 1, wherein said diffractive display device comprises a display device able to display more than two phase levels, ~~and wherein the method includes generating holograms having more than two phase levels for said diffractive display device.~~

31. (Previously Presented) A method according to claim 1, wherein said holographically generated video is multi-colour video.

32. - 33. (Cancelled)

34. (Previously Presented) Apparatus according to claim 11, wherein said apparatus is further configured to modulate a light intensity of a light source illuminating said diffractive display device in accordance with the number of on pixels in said replay field to achieve substantially uniform overall brightness between said frames.

35. (Currently Amended) Apparatus according to claim 11, wherein said diffractive display device comprises a display device able to display more than two phase levels, ~~and wherein the processing means generates~~

~~holograms having more than two phase levels for said diffractive display device.~~

36. (Previously Presented) Apparatus according to claim 11, wherein said holographically generated video is multi-colour video.
37. (New) Apparatus according to claim 11, wherein the image is a 2 dimensional image.